



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,096	09/28/2000	Hsin-Chu Tsai	042390.P8829	9115

7590

06/05/2003

Mark L. Watson
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

EXAMINER

MONESTIME, MACKLY

ART UNIT	PAPER NUMBER
----------	--------------

2676

DATE MAILED: 06/05/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

8

Office Action Summary

Application No.

09/675,096

Applicant(s)

TSAI ET AL.

Examiner

Mackly Monestime

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2676

Response to Amendment

1. The amendment received on April 21, 2003 has entered and carefully considered. Claims 1-24 are still pending in the application.

Claim Rejections - 35 U.S.C. § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-8, 11-12, 14-16 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tischler (US Patent No. 6,483,516) in view of Cosman (US Patent No. 5,651,104).
4. Tischler was cited in the last office action.
5. As per claims 1-2, 11 and 20-21, Tischler substantially disclosed the invention as claimed, including a computer system comprising: a central processor unit to execute non-graphics instructions (Fig. 3, Item No. 136; col. 4, lines 51-54) a graphics core (Fig. 3, Item No. 138); and a unified graphics cache coupled to the graphics core (Fig. 3, Item No. 140, col. 8, lines 14-30) wherein the unified graphics cache stores texture data, color data and depth data (col. 6, lines 27-42).

Art Unit: 2676

Tischler did not explicitly disclose a graphics core to compute graphical transformations via supersampling techniques, but Tischler did disclose the use of a graphics unit being able to perform graphics operations (Fig. 3, Item No. 138). However, Cosman disclosed a computer graphics system and process for adaptive supersampling in which a graphics processor is used to compute graphical transformation via supersampling (col. 9, lines 26-48). Therefore, taking the combined teachings of Cosman and Tischler as a whole, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the cited references because doing so would not only provide greater texture detail when displaying polygons defined at oblique angles; but also provide an improved computer graphics system that can display oblique texture mapped polygon with minimal aliasing and minimal loss of detail without exceedingly high processing loads.

6. As per claims 3 and 22, Tischler disclosed a central processing unit and a CPU cache coupled to the CPU core (Fig. 3, Items No. 136, 140).
7. As per claims 4 and 23, Tischler disclosed a bus interface coupled to the CPU cache and the graphics cache (Fig. 3, Item No. 142).
8. As per claim 6, Tischler disclosed a main memory coupled to the bus interface (Fig. 3, Item No. 104).
9. As per claims 7-8, 12 and 14, Tischler disclosed that the graphics core amplifies polygons and renders the polygons into the graphics cache; and image polygons are implemented via viewport transformation (col. 1, lines 25-35).

Art Unit: 2676

10. As per claims 15-16, Tischler further disclosed that the process of rendering the polygons comprises: setting the image polygons and rasterizing pixels within the image polygons (col. 1, lines 31-35).

11. Claims 5, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tischler in view of Cosman as applied to claims 1, 11 and 20 above and further in view of Penna et al (US Patent No. 6,498,606).

12. Penna was cited in the last office action.

13. As per claims 5, 19 and 24, Tischler and Cosman did not explicitly disclose that the graphics core operates according to a tile based rendering architecture. However, the concepts and associated advantages of using a tile based rendering architecture are well known in the art. It can be evidenced in the reference by Penna et al in which a tile based rendering technique is used (col. 5, lines 23-29). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have utilized the tile based rendering architecture taught by Penna et al into the system of Tischler and Cosman because doing so would provide greater design flexibility and efficiency by allowing different memory arrangement in a tile oriented operation, thereby enhance the processing speed of the graphics system.

14. Claims 9, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tischler in view of Cosman as applied to claims 1, 11 and 20 above and further in view of Pfister et al (US Patent No. 6,448,968).

15. Pfister et al was cited in the last office action.

Art Unit: 2676

16. As per claims 9, 13 and 17, the combination did not disclose that the graphics core downsampling the image polygons after the polygons have been rendered. However, Pfister et al disclosed the use of a downsampling technique (col. 12, lines 2-10). Moreover, numerous downsampling methods are well known in the graphics art; for instance downsampling often refers to a sampling of the image data by a factor of two in both the horizontal and vertical directions. In addition, the downsampled pixel value of a block of pixels in an image may be the medium value of all pixels in that block, wherein the block size is four pixels, which is typical, the values of the pixels in the block may be added together and divided by four. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have utilized the downsampling technique taught by Pfister et al into the system of Tischler and Cosman because doing so would enhance the quality of the resulting image.

17. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tischler in view of Cosman and further of Pfister et al as applied to claims 1-9 and 11-17 above, further, further in of view of Li et al (US Patent No. 5,860,060).

18. Li et al was cited in the last office action.

19. As per claims 10 and 18, the combination did not the downsampling of the image polygons are implemented by executing a bit aligned block transfer. However, the use of a bit aligned block transfer is well known in the graphics art. It can be evidenced in the reference by Li et al in which a bit blt hardware accelerator is used (col. 7, lines 19-20). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the

Art Unit: 2676

cited references because doing so would provide high quality "antialiased" text and graphics without requiring the calculation of colors by the host processor.

Response to Arguments

20. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2676

Applicant is required to give full consideration to these prior art references when responding to this office action.

The prior arts made of record and not relied upon is considered pertinent to applicant's disclosure.

Deering et al (US Patent No. 6,496,187) taught a graphics system configured to perform parallel sample to pixel calculation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mackly Monestime whose telephone number is (703) 305-3855. The examiner can normally be reached on Monday to Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached on (703) 308-6829.

Any response to this action should be mailed to:

Commissioner of Patent and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Va, Sixth Floor (Receptionist).

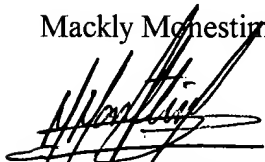
Serial Number: 09/675,096

Page 8

Art Unit: 2676

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Mackly Monestime



Patent Examiner

May 27, 2003



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600